July 2021

Product Sheet

QIAcard® FTA® PlantSaver

Contents

QIAcard FTA PlantSaver	100 cards

Description

The QIAcard FTA PlantSaver (cat. no. WB120065) is a reliable laboratory and field collection tool designed for room temperature collection, shipment, archiving, and purification of nucleic acids from a wide variety of biological samples. The 4 sample area format includes a laminated flap that allows to vigorously crush solid tissue sample material (e.g., plant leaves, insects, or mushrooms) into the impregnated FTA matrix without damaging the FTA card. The FTA chemistry additionally lyses cell membranes, denatures proteins upon contact, and captures the released DNA. The QIAcard FTA PlantSaver enables safe storage and analysis of precious samples to provide, e.g., Cannabis strain information by DNA identification to law enforcement or detecting genetically modified organisms (GMOs). Suitable downstream procedures are, e.g., End point PCR, STR analysis, and next-generation sequencing technologies.

Shipping and Storage

The QIAcard FTA PlantSaver is shipped at room temperature (15–25°C). Store unused cards in original packaging in a cool, dry, clean environment. After applying samples, allow them to dry, and then store securely at room temperature in a dry environment, away from food or feedstock. When stored correctly, the QIAcard FTA PlantSaver are good until the expiration date printed on the kit box lid.

Symbols

REF	Catalog number
LOT	Lot number
	To be used by
	Temperature limitations
	Legal manufacturer

Quality Control

In accordance with QIAGEN's ISO-certified Quality Management System, each lot of the QIAcard FTA PlantSaver is tested against predetermined specifications to ensure consistent product quality.

Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate safety data sheets (SDSs). These are available online in convenient and compact PDF format at **www.qiagen.com/safety**, where you can find, view, and print the SDS for each QIAGEN kit and kit component.

Procedure

Direct leaf press

1. Place the leaf over the marked circle (underside of the leaf facing down) on top of the QIAcard FTA PlantSaver card.
2. Overlay the leaf with Parafilm or replace the cover sheet over the QIAcard FTA PlantSaver matrix and leaf.

3. Using a heavy blunt object (such as a small porcelain pestle, tack hammer, screwdriver handle), apply moderate pounding for 15 s over each sample circle area to burst the cell walls of the plant tissue.
4. To verify that the plant material has transferred sufficiently to the QIAcard FTA PlantSaver matrix, visual inspection of the matrix on the side opposite to that of the tissue application should reveal the presence of plant fluids as green and/or wet areas.

   Note: Care should be taken not to damage the matrix.
5. When plant tissue transfer is complete, allow the QIAcard FTA PlantSaver card to air-dry for 1 h (minimum) at room temperature.
6. For transportation of the QIAcard FTA PlantSaver, the use of Multi-Barrier Pouches (cat. no. WB100037) and Desiccants (cat. no. WB100003) is recommended.

Plant homogenate

1. Starting with a minimum of 10 mg of plant tissue and using a ratio of 1 part plant tissue to 5 parts PBS (with DTT added if necessary, for some cereal-grain species and soybean), grind leaf material to a smooth homogenate using a mortar and pestle (or micropestle and microfuge tube if preferred).

   Note: The 1:5 ratio is based on using young plant leaf tissue.
2. Using a pipette tip (remove 2 mm from the end of a standard 200 µl tip), apply the homogenate (125 µl is the maximum volume per sample area) to the QIAcard FTA PlantSaver card matrix inside the marked circle, and allow the card to air-dry for 2 h (minimum) at room temperature.

   Note: If all of the plant tissue cannot be homogenized completely, the semi-homogenized tissue can be pressed against the card and then discarded.
3. For transportation of the QIAcard FTA PlantSaver, the use of Multi-Barrier Pouches (cat. no. WB100037) and Desiccants (cat. no. WB100003) is recommended.

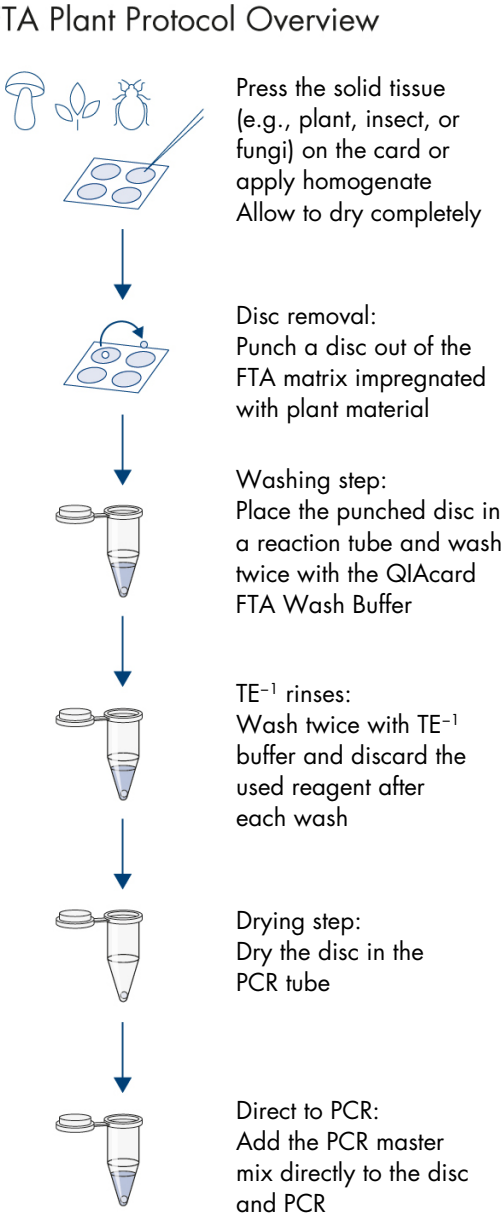

Figure 1. FTA Plant Protocol overview.

Sample purification protocol

1. Place the QIAcard FTA PlantSaver matrix on the Cutting Mat (cat. no WB100020 or WB100088).
2. Using the UniCore Punches 2.0 mm (cat. no. WB100076 or WB100029), remove a disk from the center of the dried sample area.
3. Transfer the punch to an appropriate PCR amplification tube (or 1.5 ml microfuge tube).

   Note: Care should be taken when handling the dry FTA disks because the static charge that can develop on some plastic labware can repel the disks.

   Note: Although it is not necessary to rinse the UniCore Punch between uses, it is important to ensure no residual paper is carried from one punch to the next. Punch into a blank matrix or filter paper between sample punches or wipe the punch tip with alcohol between samples.
4. Add 200 µl of QIAcard FTA Wash Buffer (cat. no. WB120112 or WB120204) to each tube, close the tube, and invert twice. Incubate for 4–5 min at room temperature.
5. Pipette the QIAcard FTA Wash Buffer up and down twice.
6. Make sure that the punch remains in the tube, using a pipettor, and remove and discard as much QIAcard FTA Wash Buffer as possible.
7. Repeat steps 4 through 6 for a total of two QIAcard FTA Wash Buffer washes.
8. Add 200 µl of TE^{-1} buffer (10 mM Tris·Cl, 0.1 mM EDTA) to each tube, close the tube, and invert twice. Incubate for 4–5 min at room temperature.
9. Pipette the TE^{-1} buffer up and down twice.
10. Make sure that the punch remains in the tube, using a pipettor, and remove as much TE^{-1} buffer as possible.
11. Repeat steps 8 through 10. If purification was not conducted using a PCR tube, transfer the FTA disk to a PCR tube with clean forceps.
12. Allow the punch to completely air-dry for 1 h at room temperature or for 20 min at 56°C.

    Note: The DNA purification process removes the protective chemistry of the FTA Technology; it is recommended that PCR amplification be conducted within 3 h of punch drying or the punch is stored at 4°C or –30 to –15°C.

PCR amplification

Add 25–50 µl of the complete PCR amplification mix directly to the PCR tube containing the dried punch. Thermocycling is performed assuming the DNA volume used is zero.

Note: To ensure a successful transfer of plant DNA to a QIAcard FTA PlantSaver card, it is imperative that the press of the plant leaf to the FTA matrix be sufficiently strong.

A press that is too weak will not transfer enough DNA to the matrix to support most applications. When applying pressure to the parafilm/leaf/card sandwich, it is important to have a quick and strong hit that has enough momentum to break the cell walls. A press that starts out gentle and gets stronger slowly most likely will not work well. At the same time, hitting the card too strongly will destroy the matrix; it becomes even more fragile when already wet with plant juice. A rubbing motion is not recommended (disregard the suggestion in the Plant NA booklet); it is better to apply pressure at a 90° angle.

For some species, a 2.0 mm punch may inhibit the PCR reaction; a 1.0 mm punch can be used in as much as 50 µl of PCR reaction. In some cases, chlorophyll becomes difficult to remove from the punch during the purification procedure described above. Depending on the amount remaining on the disk, it does not always inhibit the PCR reaction; however, to clean up a visibly green DNA elution that suggests the presence of chlorophyll, use the following modifications to the washing procedure:

1. After the QIAcard FTA Wash Buffer washes use isopropanol instead of TE^{-1} buffer.
2. Apply 200 µl of isopropanol, incubate for 2 min, pipette up and down a couple of times, and discard.
3. Repeat for a total of 2 isopropanol washes. There is no need to follow up with TE^{-1} buffer; just make sure to dry the punches completely at room temperature to get rid of isopropanol.

Ordering Information

Product	Contents	Cat. no.
QIAcard FTA PlantSaver	100 cards	WB120065
Related products		
QIAcard FTA Wash Buffer (500 ml)	500 ml bottle	WB120204
QIAcard FTA Wash Buffer (25 ml)	25 ml bottle	WB120112
Cutting Mat 6.0" x 8.0"	For clean sample cuts from FTA/FTA Elute Cards	WB100020
Cutting Mat 2.5" x 3.0"	For clean sample cuts from FTA/FTA Elute Cards	WB100088
UniCore Punch 2.0 mm (25)	25 pieces (including 2 cutting mats)	WB100076
UniCore Punch Kit 2.00 mm (4)	4 pieces (including 2 cutting mats)	WB100029
Indicating Desiccant Pack	Desiccant packets (1 g) with indicator to ensure that FTA Cards remain dry during transport or storage. A color change from blue to pink indicate absorption of moisture.	WB100003
Multi-Barrier Pouch 4.37" x 6.5"	100 pouches (4.37 x 6.5 inch/11.1 x 16.5 cm)	WB100037

QIAcard FTA PlantSaver is intended for molecular biology applications. This product is not intended for the diagnosis, prevention, or treatment of a disease.

All due care and attention should be exercised in the handling of the products. We recommend all users of QIAGEN® products to adhere to the NIH guidelines that have been developed for recombinant DNA experiments, or to other applicable guidelines.

Document Revision History

Date	Changes
07/2021	Initial revision